

Traffic Study and Short- and Long-Term Alternatives for Improvements at Intersection of Fellsway East and Highland Avenue in Malden



**Thursday, December 8, 2016 - 7:00 p.m. – 8:30 p.m.
Beebe School Auditorium – 401 Pleasant Street, Malden**



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Lieutenant Governor

Karyn E. Polito

Energy and Environmental Secretary

Matthew A. Beaton

Department of Conservation and Recreation Commissioner

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David D'Arcangelo
Debbie DeMaria



DCR Partnership Matching Funds Program Funding

Traffic Study funded by:

- DCR - \$20,000
- City of Malden - \$10,000



DCR Mission Statement

To protect, promote and enhance our common wealth of natural, cultural and recreational resources for the well-being of all.



Purpose of Meeting

Present study findings on existing conditions and short- and long-term alternatives for improvements at the intersection of Fellsway East and Highland Avenue in Malden.

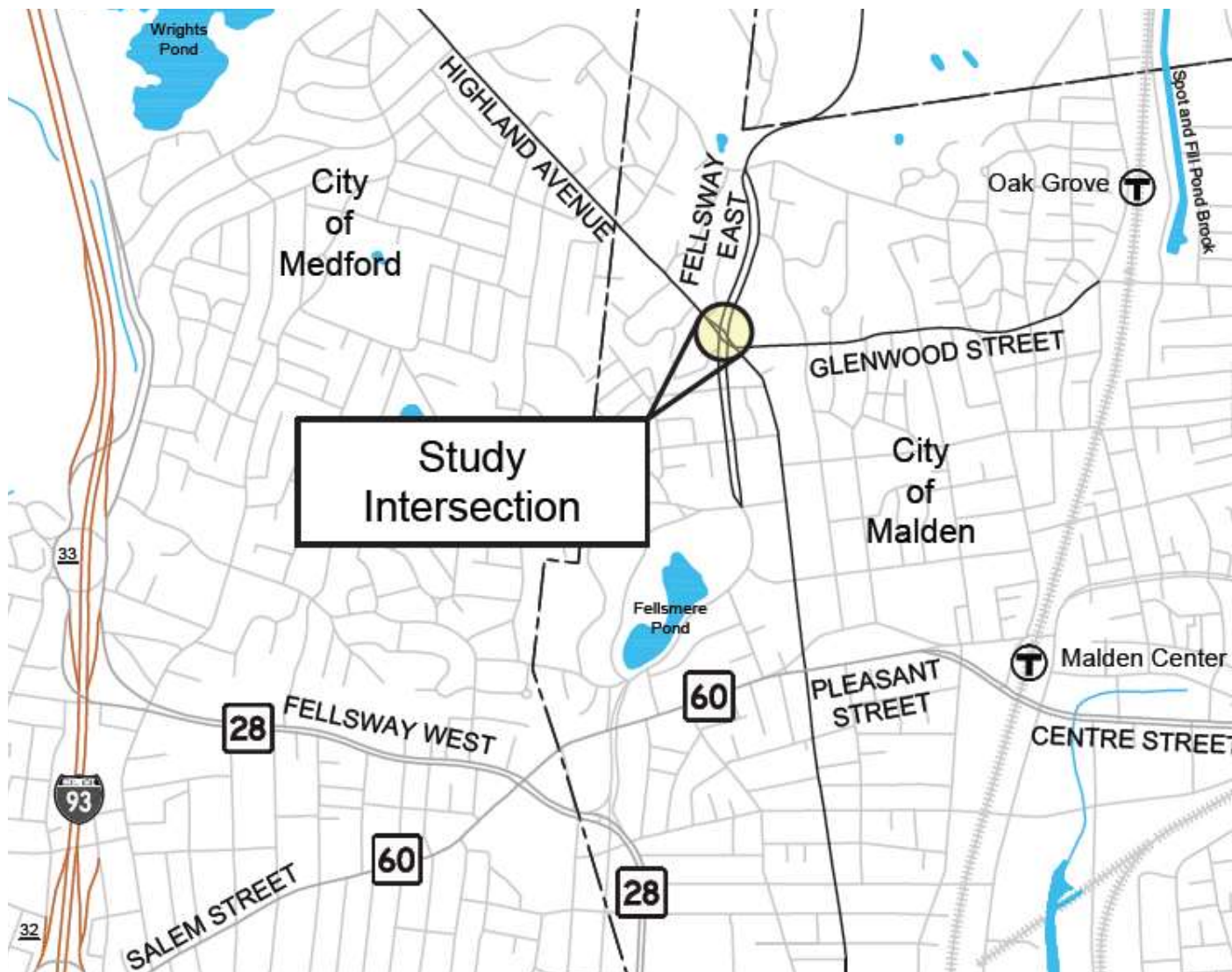


Consultants

- Traffic study and conceptual designs for intersection improvements – BSC Group and Kittleson & Associates Funded by Partnership
- Additional Short-term implementation design-Toole Design Group



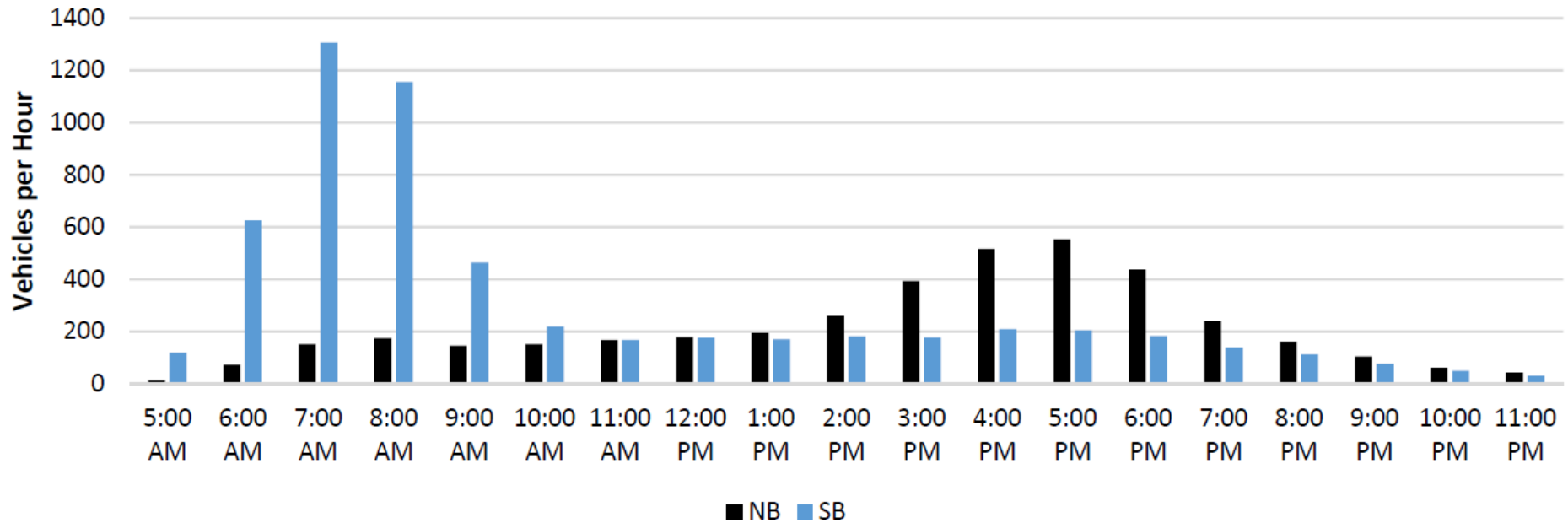
BSC Study Area – Fellsway and Highland Ave.





Traffic Volumes

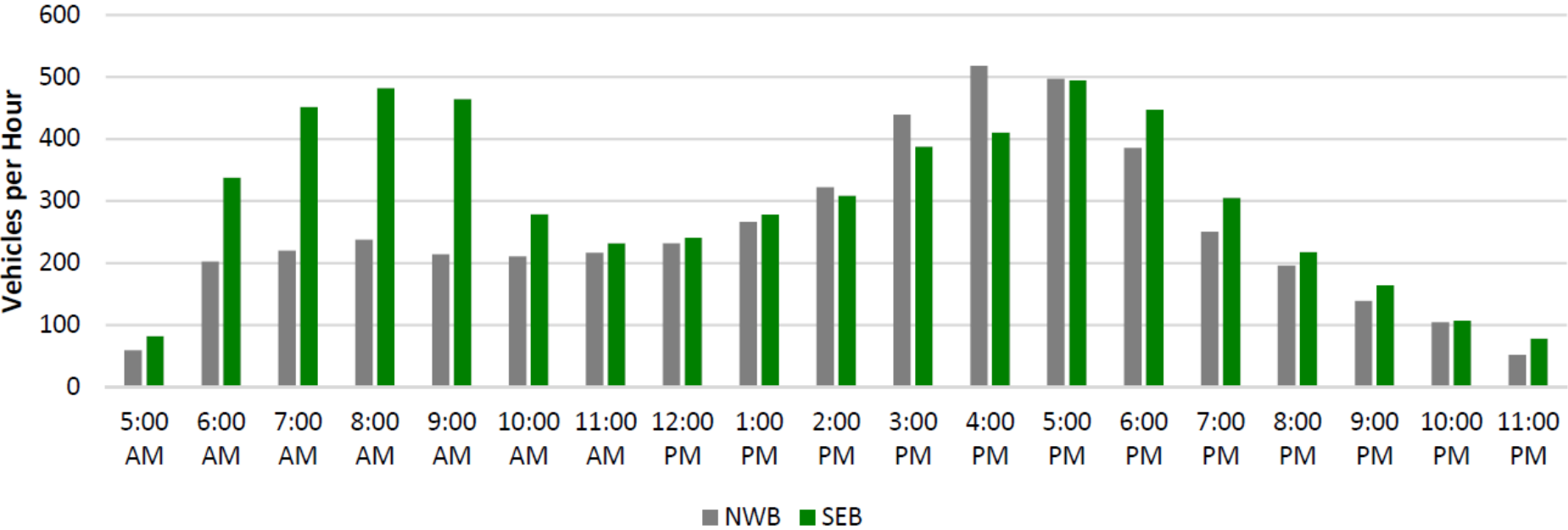
Fellsway East North of Glenwood Street





Traffic Volumes

Highland Avenue West of Fellsway East





Speed Data

(Posted at 25 mph)

<u>ATR Location</u>	<u>85th Percentile Speed (MPH)</u>	
	<u>Towards Intersection</u>	<u>Away from Intersection</u>
Fellsway East north of Glenwood Street	42 (SB)	47 (NB)
Fellsway East south of Glenwood Street	43 (NB)	41 (SB)
Highland Avenue west of Fellsway East	30 (SEB)	33 (NWB)
Highland Avenue east of Fellsway East	35 (NWB)	28 (SEB)



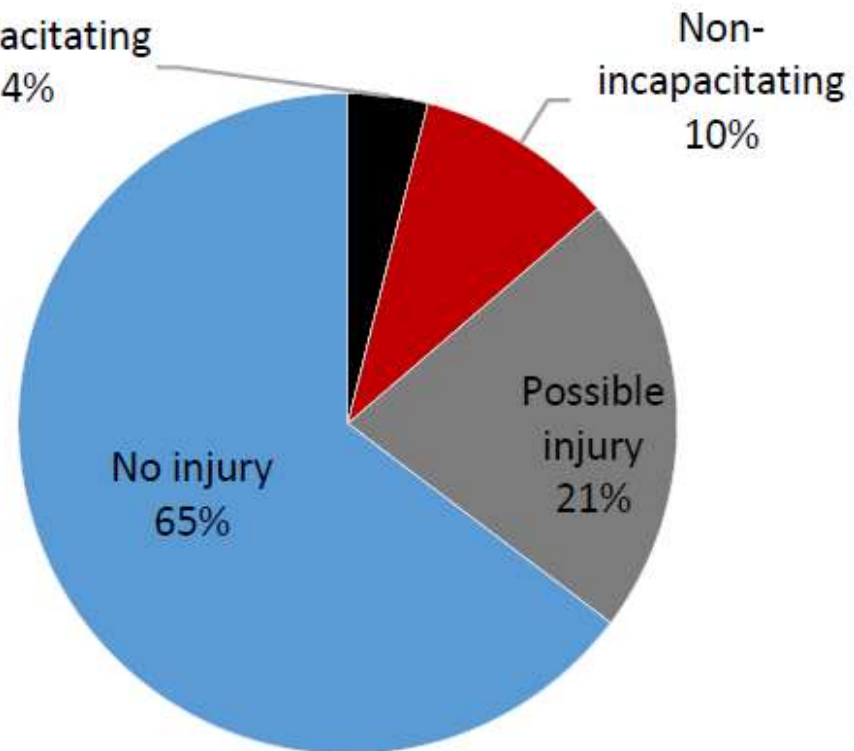
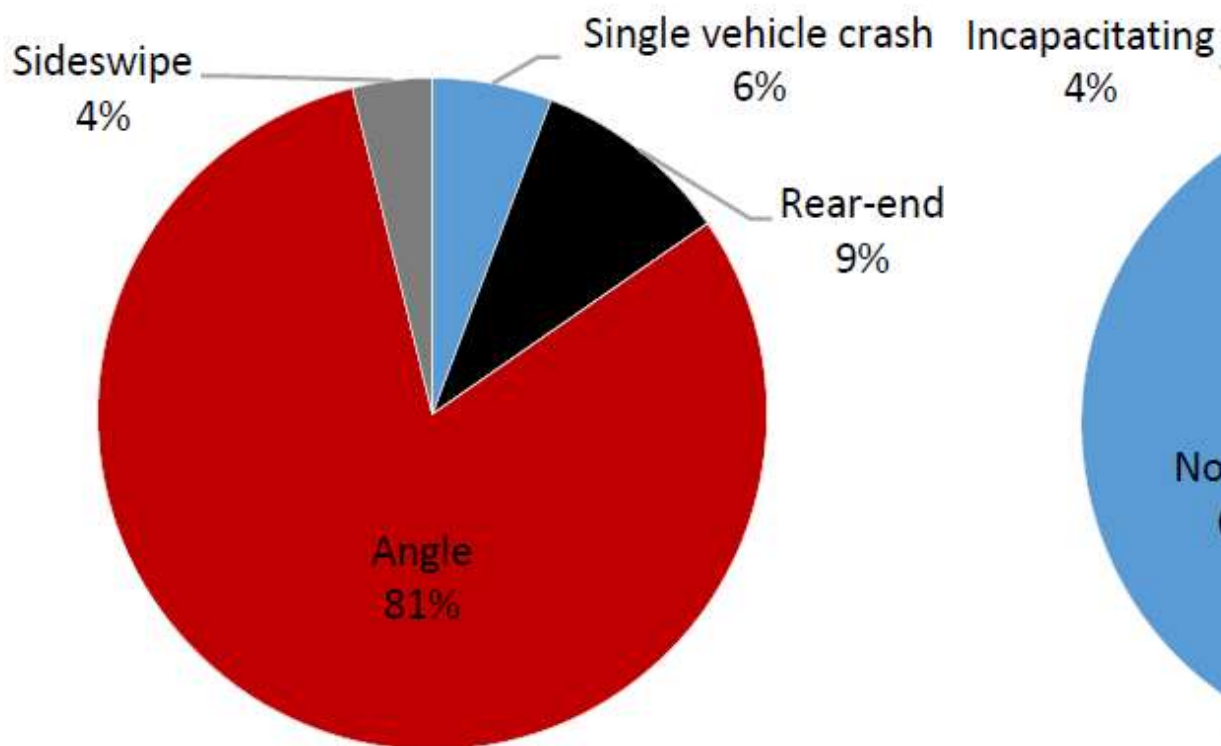
Crash Data (2011-2015)

Note: Numerals indicate # of occurrences during that timeframe.





Crash Data (2011-2015)





Key Traffic Study Findings

- High number of crashes
- Lack of sufficient traffic control
- Wide pavement areas
- Non-conformance right-of-way rules
- Outdated, conflicting, and missing signs
- Long pedestrian crossings
- High vehicle approach speeds
- High weekday morning peak hour volumes
- Long queues and delays



Guiding Principles for Development of Study Alternatives

- Improve intersection operations and clarification
- Reduce number of crashes
- Reduce vehicular speeds
- Improve safety for pedestrians and bicyclists throughout the intersection
- Reduce sign clutter
- Reduce pavement areas



Alternatives Identified

- Long-Term Modifications
 - Alternative 1: **Signalization**
 - Alternative 2: **Roundabout**
- Initial Short-Term Modifications
 - Alternative 1: **Buffered Bike Lanes**
 - Alternative 2: **Separated Bike Lanes**



Long-Term: Alternative 1 Signalize





Long-Term Alternative 1

- Short crosswalks with ADA/AAB compliant wheel chair ramps
- Audible accessible pedestrian signals
- More green space area
- Reconfigured intersection geometry
- Reduced travel lanes
- Potential for Bicycle Lane
- Recommended realignment of Glenwood St and Sawyer St for better sight distance (T-intersection with STOP control)

Long-Term Alternative 1 (Continued)

- Combined left-thru lane essentially operate as a left turn only lane in AM peak hours from Fellsway East (SB)
- Improved intersection operation and clarification to determine drivers' ROW
- Shorter queue length in morning peak hours on critical approaches compared to Alternative 2 Roundabout recommendation
- Better overall level of service for the intersection



Long-Term: Alternative 2 Roundabout





Long-Term Alternative 2

- Modified intersection geometry induce desirable vehicular speed
- Reduce the frequency and severity of crashes (FHWA)
- Increased green space area at the intersection
- Reduction in vehicular conflicts with reconfigured intersection geometry
- Reduced travel lanes
- Raised short crosswalks reduce vehicles speed at the intersection approaches



Long-Term Alternative 2 (continued)

- Roundabout fits within existing layouts; No ROW takings
- Modified Central Oval Island design for better direct vehicular movements thru intersection
- Low cost of project construction and long term maintenance compared to long-term alternative 1
- Shorter queue length on Highland Avenue NW approach improve Glenwood St operation

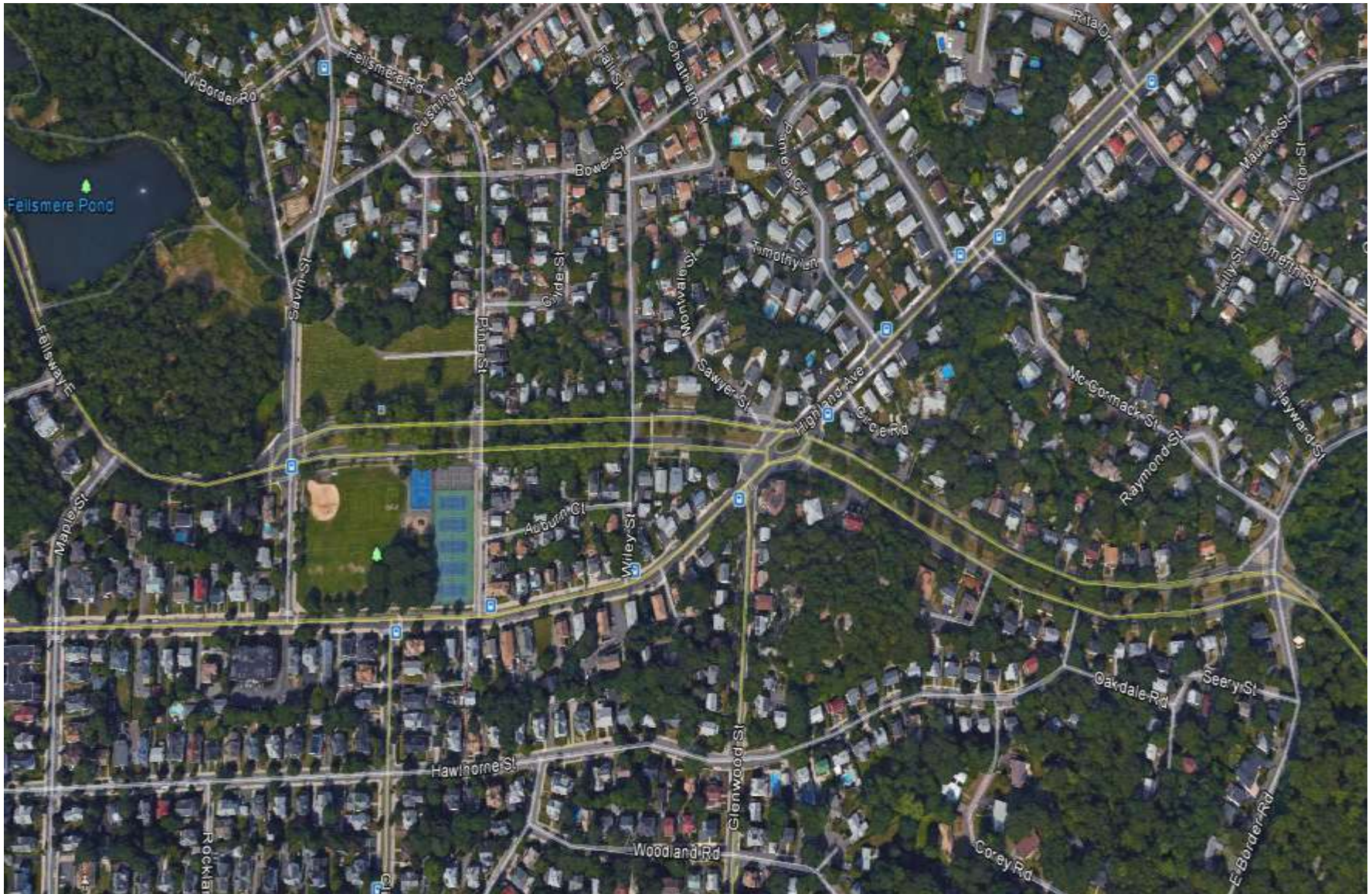


Short-Term: Concept - Intersection

- Install additional signage including speed limit signs
- Install traffic cones to reduce the number of travel lanes to one in each direction



Short-Term: Concept – Savin to E. Border





Short-Term: Concept – Savin to E. Border

- Fellsway is one lane in each direction outside of this section
- Extend the one lane concept to this entire section of roadway
- Utilize the extra pavement for parking and bicycle facilities
- Cost is low due to use of simple pavement markings



Bicycle Facilities

- Opportunity to add bicycle facilities
- Increases safety for all roadway users
- Improves visibility and predictability
- Encourages slower speeds
- May include physical separation for motorists

Bike Lane



Buffered Bike Lane

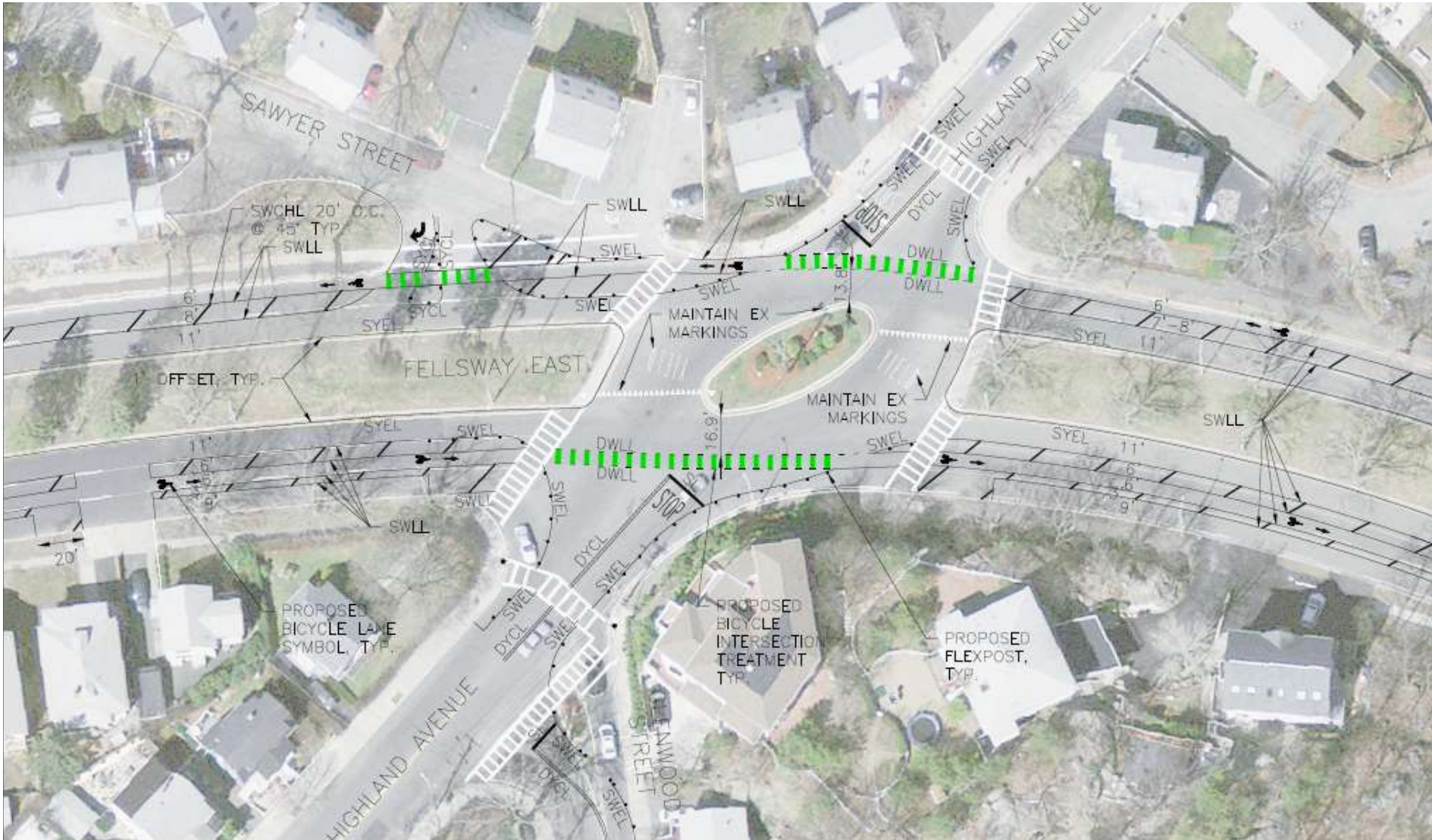


Separated Bike Lane





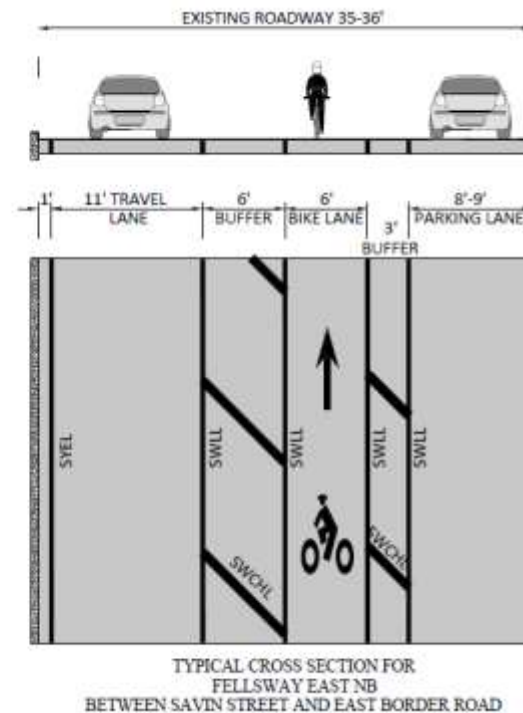
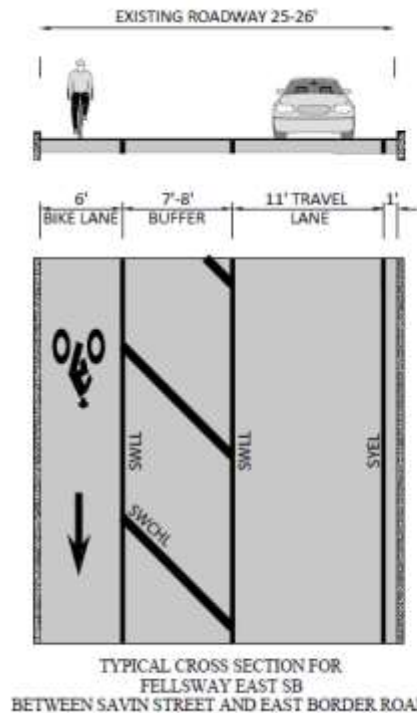
Short-Term: Alternative 1 - Recommended





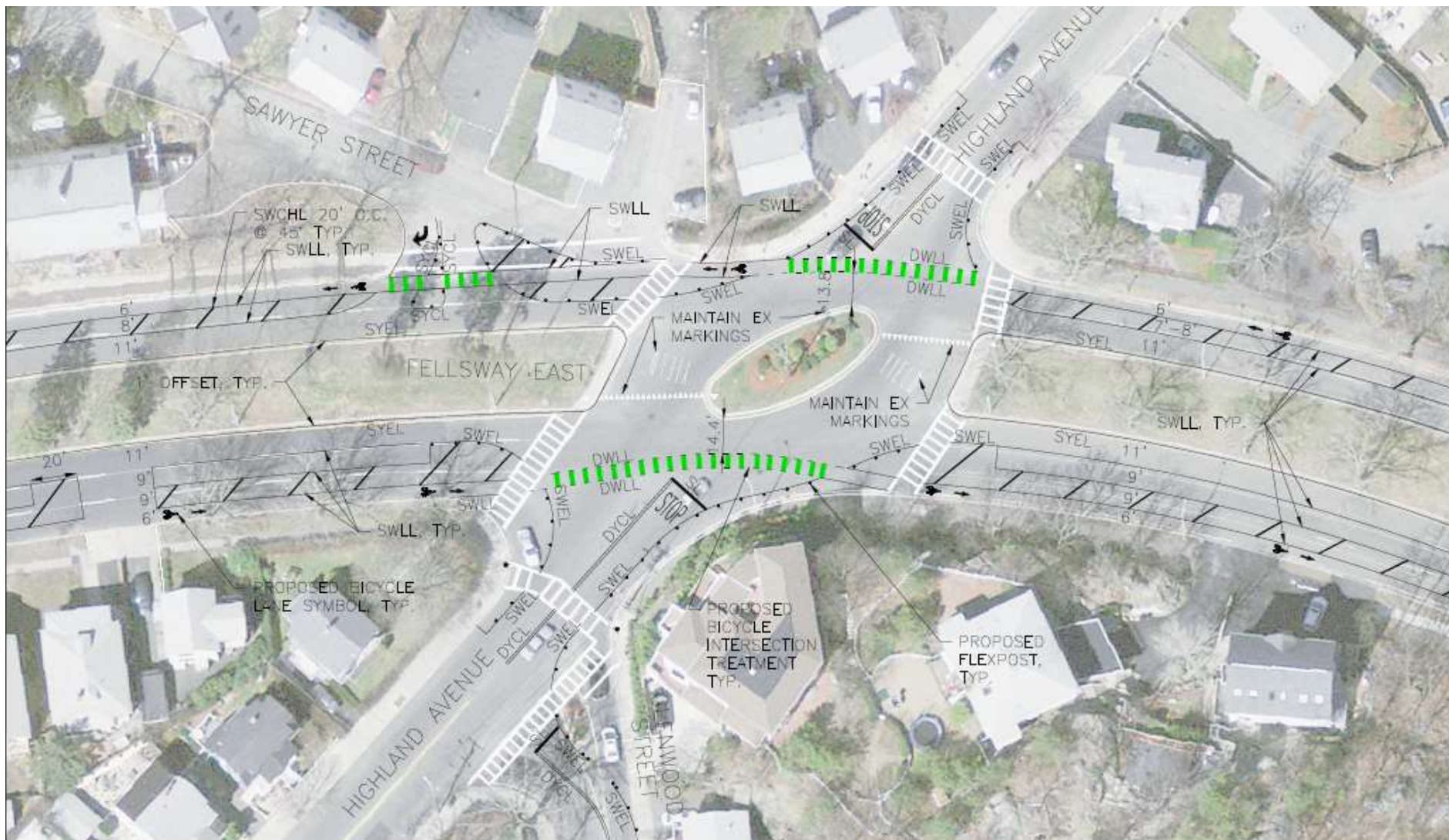
Short-Term: Alternative 1 - Recommended

- Add buffered bike lanes
- Clarify traffic controls
- Reduce pedestrian crossings
- Reduce travel lanes





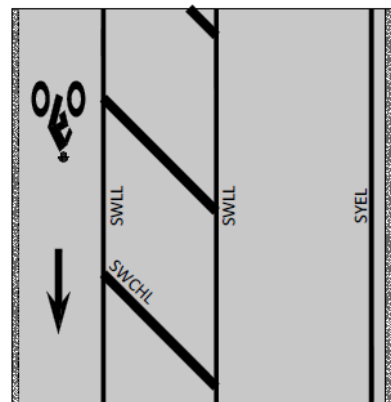
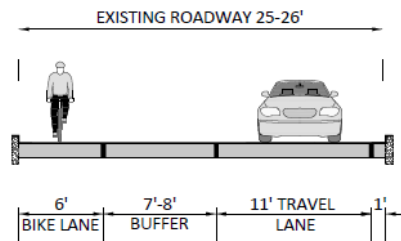
Short-Term: Alternative 2



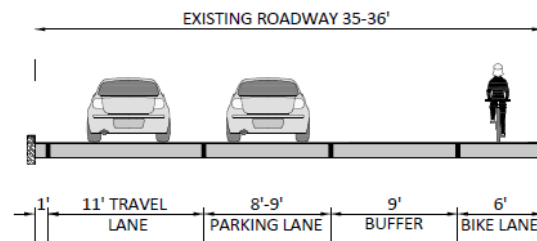


Short-Term: Alternative 2

- Add separated bike lanes
- Clarify traffic controls
- Reduce pedestrian crossings
- Reduce travel lanes



TYPICAL CROSS SECTION FOR
FELLSWAY EAST SB
BETWEEN SAVIN STREET AND EAST BORDER ROAD



TYPICAL CROSS SECTION FOR
FELLSWAY EAST NB
BETWEEN SAVIN STREET AND EAST BORDER ROAD



Preliminary Cost Estimates/Schedule

- Recommended Short-Term Alternative
 - \$50k to \$100k
 - Spring 2017
- Long-Term Alternative 1 (Signalization)
 - \$650k to \$1 million
 - Pending funding
- Long-Term Alternative 2 (Roundabout)
 - \$350k to \$500k
 - Pending funding



Q&A/Discussion



Additional Information

For more information:

<http://www.mass.gov/eea/agencies/dcr/public-outreach/public-meetings/>

If you have comments or suggestions:

Submit Online: <http://www.mass.gov/eea/agencies/dcr/public-outreach/submit-public-comments/>

Write: Department of Conservation and Recreation
Office of Public Outreach
251 Causeway Street, 6th Floor
Boston, MA 02114

Deadline: Thursday, December 29, 2016

Note: Public comments submitted to DCR may be posted on the DCR website in their entirety, and no content, including personal contact information, will be redacted.

If you have questions or concerns, or wish to be added to an email list to receive DCR project-specific or general announcements: contact DCR's Office of Community Relations at 617-626-4973 or Mass.Parks@state.ma.us.